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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,559	12/26/2001	Jiang-Fu Kao	JC-8113-C	1553

7590

10/08/2003

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EXAMINER

BARRECA, NICOLE M

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 10/08/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/034,559

Applicant(s)

KAO ET AL.

Examiner

Nicole M. Barreca

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/26/01 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-18 are pending in this application.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the ground line must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 4, 5, 7, 8, 10, 11, 13, 14, 16, 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Mizukami (US 4,256,778).
5. Mizukami discloses a method for forming a photomask. Transparent conductive film 2 is formed on transparent glass plate 1. A plurality of opaque substance films 3

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and 3' of chromium (cover film provided with exposure patterns) are formed on the film

2. The conductive film 2 is grounded (4) during the irradiation. In another embodiment the opaque mask pattern 3 is formed directly on the glass plate 1 and the conductive transparent film 2 is formed thereon. See col.2, 11-col.3, 14, fig. 3a-3c, fig.4.

6. Claims 1, 4, 5, 7, 10, 13, 14, 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Akbar (US 2003/0031934).

7. Akbar discloses a photomask protected against electrostatic damage.

Photomask 8 is formed of metallic patterns 12, 14, 16 formed on transparent fused quartz or silica substrate 10. Metallic patterns 12, 14, 16 are formed of chromium or molybdenum silicide (applicant's cover layer w/ exposure patterns). Thin film 30 of electrically conductive material which is transparent to the wavelengths of light used for printing on the surface of wafer 22 is formed over the metallic patterns in order to prevent damage due to electrostatic charge. In an alternative embodiment the electrically conducting optically transparent thin film 30 is deposited over the fused quartz or silica transparent substrate 10 prior to the deposition of the photomask lines or patterns. The chromium thin film is then deposited on top of film 30 and the pattern is etched into the chromium layer. See [0013]-[0021], fig. 2, 3.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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9. Claims 3, 9, 12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizukami or Akbar.

10. The teachings of Mizukami and Akbar have been discussed above. Mizukami and Akbar each teach a photomask comprising a transparent substrate of glass or quartz, a chromium cover layer with exposure patterns and a transparent conductive thin film. The references teach a number of metals, and metal oxides, such as titanium oxide, cadmium oxide, indium tin oxide, palladium, platinum and gold, that may be used for the transparent conductive materials, but do not disclose using palladium aluminum oxide. The references however do teach that the choice for the material (and thickness) of this layer will be dependent on the wavelength of exposing light being used and that other materials may be used for the transparent conductive material, as long as it is transparent to the exposing light. It would have been within the ordinary skill of one in the art to determine the conductive materials which would be transparent to the exposing light and to use palladium aluminum oxide for the transparent conductive layer in the methods of Mizukami or Akbar, if the wavelength of exposing light required, because Mizukami and Akbar teach that the choice of materials (and thickness) for the transparent conductive layers will be dependent on the wavelength of exposure light.

11. Claims 6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizukami or Akbar as applied to claims 1 or 10 above, and further in view of Buck (US 6,596,444).

12. The teachings of Mizukami and Akbar have been discussed above. Mizukami and Akbar each teach a photomask comprising a transparent substrate of glass or

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quartz, a chromium cover layer with exposure patterns and a transparent conductive thin film. The references however do not disclose that the transparent substrate is made of calcium fluoride. Buck teaches that known materials used for transparent substrates for photomasks include quartz, silica, magnesium and calcium fluoride (col.5, 56-60). It would have been obvious to one of ordinary skill in the art to use calcium fluoride for the transparent substrate in the method of Mizukami or Akbar instead of quartz because Buck teaches that quartz and calcium fluoride are both known materials used in the photomask art for transparent substrates.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicole M. Barreca whose telephone number is 703-308-7968. The examiner can normally be reached on Monday-Thursday (8:00 am-6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Nicole Barreca
Patent Examiner
Art Unit 1756

9/29/03